

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT,PGPB,JPAB,EPAB,DWPI	115 and cation exchanger	30	<u>L16</u>
USPT,PGPB,JPAB,EPAB,DWPI	114 not electrodialysis	279	<u>L15</u>
USPT,PGPB,JPAB,EPAB,DWPI	ion exchange column and lactic acid	296	<u>L14</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep0265409	1	<u>L13</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep265409	0	<u>L12</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep-265409-\$.did.	2	<u>L11</u>
EPAB	ep-0265409-\$.did.	0	<u>L10</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep-0265409-\$.did.	0	<u>L9</u>
USPT	1,6-HEXANEDIAMINE AND L7 AND L6 AND L5	8	<u>L8</u>
USPT	ALCOHOL AND ZIRCONIUM	23505	<u>L7</u>
USPT	UREA OR CARBAMATE	91190	<u>L6</u>
USPT	DIURETHANE OR POLYURETHANE	107640	<u>L5</u>
USPT	l2 and l3	20	<u>L4</u>
USPT	peracid and 562/6	50	<u>L3</u>
USPT	l1 and distill\$5	11155	<u>L2</u>
USPT	hydrogen peroxide and acetic acid	18364	<u>L1</u>

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=> s 50-21-5/prep
34169 50-21-5
2771543 PREP/RL
L2 1876 50-21-5/PREP
(50-21-5 (L) PREP/RL)

=> s 50-21-5/pur
34169 50-21-5
150304 PUR/RL
L3 187 50-21-5/PUR
(50-21-5 (L) PUR/RL)

=> s 12 or 13
L4 1876 L2 OR L3

=> s 14 and cation exchanger
216743 CATION
79238 EXCHANGER
16733 CATION EXCHANGER
(CATION(W) EXCHANGER)
L5 16 L4 AND CATION EXCHANGER

=> s 15 not electrodialysis
8378 ELECTRODIALYSIS
L6 15 L5 NOT ELECTRODIALYSIS

=> d 1-15 abs ibib

L6 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2001 ACS
AB Purifn. of lactic acid by batch reactive distn. was carried out using a
cation exchange resin [Dowex 50W]. Two reactions, esterification and
hydrolysis, are involved and an app. with two distn. columns was developed
and operated in a batch mode to ensure enough residence time in the
re-boiler and column. The effects of operation variables such as catalyst
loading, reactant mole ratio, feed concn., type of alc. and partial
condenser temp. on the yield were studied. The products of esterification
(Me lactate and water) were distd. into the hydrolysis column to be
recovered as pure lactic acid. The yield of lactic acid increased as
catalyst loading in the esterification column increased and reactant mole
ratio and feed lactic acid concn. decreased. Methanol as a reactant gave
higher yield than any other alcs. The yield of recovered lactic acid was
as high as 90%. The yield of lactic acid was closely related to the
boiling temp. of the reaction mixt. in the esterification stage. The
prodn. of lactic acid with high purity is of interest for use as feedstock
in the food, pharmaceutical, cosmetics, textile, and leather industries.

ACCESSION NUMBER: 1999:784626 CAPLUS

DOCUMENT NUMBER: 132:94936

TITLE: Effects of operation variables on the recovery of
lactic acid in a batch distillation process with
chemical reactions

AUTHOR(S): Seo, Yongwon; Hong, Won Hi; Hong, Tae Hee

CORPORATE SOURCE: Department of Chemical Engineering, Korea Advanced
Institute of Science and Technology, Taejon, 305-701,
S. Korea

SOURCE: Korean J. Chem. Eng. (1999), 16(5), 556-561

CODEN: KJCHE6; ISSN: 0256-1115

PUBLISHER: Korean Institute of Chemical Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 12

REFERENCE(S): (1) Bessling, B; Chem Eng Technol 1998, V21, P393
CAPLUS

(2) Choi, J; International Journal of Chemical

- (3) Choi, J; Journal of Chemical Engineering of Japan
 1999, V32, P184 CAPLUS
 (4) Chopade, S; Reactive & Functional Polymers 1997,
 V32, P53 CAPLUS
 (5) Cockrem, C; US 5210296 1993 CAPLUS
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB An economically viable and energy-efficient method for the recovery of lactic acid from a medium contg. an alk. earth metal salt of lactic acid (e.g., calcium lactate) comprises: (a) reacting a conjugate base of an alkali metal (e.g., sodium bicarbonate) from a subsequent step with the medium to form a water-sol. alkali metal lactate salt (e.g., sodium lactate) and a basic compd. of the alk. earth metal (e.g., calcium carbonate); (b) sepg. the water-sol. alkali metal lactate salt and the basic compd. of the alk. earth metal; (c) splitting (e.g., contacting the salt with an acidic **cation exchanger**) the water-sol. alkali metal lactate to form a conjugated alkali metal base and a lactic acid product (e.g., lactic acid or its derivs.); (d) sepg. the conjugated alkali metal base and the lactic acid product; (e) reusing the sepd. conjugated alkali metal base or a product thereof in the step (a); and (f) reusing the basic compd. of the alk. earth metal, sepd. in step (b), or a product of it to form an alk. earth-metal salt of lactic acid.

ACCESSION NUMBER: 1998:604890 CAPLUS
 DOCUMENT NUMBER: 129:204427
 TITLE: A process for the recovery of lactic acid using Group IIA and IA salts
 INVENTOR(S): Eyal, Aharon Meir; Witzke, David; Fisher, Rod
 PATENT ASSIGNEE(S): Yisum Research Development Company of the Hebrew, Israel
 SOURCE: PCT Int. Appl., 35 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9837050	A1	19980827	WO 1998-US2695	19980212
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
IL 120279	A1	19991028	IL 1997-120279	19970221
AU 9862769	A1	19980909	AU 1998-62769	19980212
EP 970035	A1	20000112	EP 1998-905056	19980212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9807458	A	20000509	BR 1998-7458	19980212
PRIORITY APPLN. INFO.:		IL 1997-120279	A	19970221
		WO 1998-US2695	W	19980212

L6 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB A process for the recovery of lactic acid from aq. solns. contg. at least one water-sol. lactate salt and having a pH of 4-14 comprises: contacting the aq. soln. with a **cation exchanger** which is at least partially in its acid form, said **cation exchanger** being water immiscible in both acid and salt form, whereby ion exchange is effected, protons are transferred from the **cation exchanger** to the aq. soln. to acidulate it and to form lactic acid therein and cations from the aq. soln. are bound by the **cation**

exchanger; reacting the **anion**-carrying **cation**
• **exchanger** to convert it into a **cation exchanger**
which is at least partially in its acid form and to a second product,
which second product is basic and comprises the cation of the salt; and
recovering lactic acid from the lactic acid-contg. acidulated aq. soln.

ACCESSION NUMBER: 1998:239189 CAPLUS
DOCUMENT NUMBER: 128:283875
TITLE: A process for the recovery of lactic acid
INVENTOR(S): Eyal, Aharon Meir; Elankovan, Ponnampalam
PATENT ASSIGNEE(S): Cargill Incorporated, USA; Eyal, Aharon Meir;
Elankovan, Ponnampalam
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9815518	A2	19980416	WO 1997-US17774	19971002
WO 9815518	A3	19980625		
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BE, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9748936	A1	19980505	AU 1997-48936	19971002
EP 932593	A2	19990804	EP 1997-911612	19971002
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
BR 9712228	A	20000125	BR 1997-12228	19971002
JP 2001506585	T2	20010522	JP 1998-517608	19971002
PRIORITY APPLN. INFO.:			IL 1996-119389 A	19961009
			WO 1997-US17774 W	19971002

L6 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB In the title process, an aq. salt soln. (e.g., monosodium citrate) is placed into a first compartment on one side of a cation exchange membrane (e.g., Neosepta CN-1) together with an org. amine extractant of limited water miscibility (e.g., trilaurylamine), and an aq. acid soln. (e.g., HNO₃) is placed into a second compartment on the other side of the membrane. The free acid (e.g., citric acid) forms in the first compartment and collects in the org. amine extractant where it is recovered. The process is particularly suitable for the recovery of a carboxylic acid or an amino acid from its salt (i.e., from fermn. broths contg. them).

ACCESSION NUMBER: 1997:281923 CAPLUS
DOCUMENT NUMBER: 126:263851
TITLE: **Cation exchanger** membrane process
for the recovery of carboxylic acids from carboxylate salts
INVENTOR(S): Eyal, Aharon
PATENT ASSIGNEE(S): Yissum Research Development Company of the Hebrew Univ. of Jerusalem, Israel; Eyal, Aharon
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9711047 A1 19970327 WO 1996-IL105 19960909
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM
IL 115346 A1 19991028 IL 1995-115346 19950919
CA 2232572 AA 19970327 CA 1996-2232572 19960909
AU 9668888 A1 19970409 AU 1996-68888 19960909
EP 863865 A1 19980916 EP 1996-929508 19960909
EP 863865 B1 20000531
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
BR 9610494 A 19991109 BR 1996-10494 19960909
AT 193515 E 20000615 AT 1996-929508 19960909
ES 2148785 T3 20001016 ES 1996-929508 19960909
US 6022992 A 20000208 US 1998-43419 19980528
PRIORITY APPLN. INFO.: IL 1995-115346 A 19950919
WO 1996-IL105 W 19960909

L6 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Reidel-de-Haen VI-15, Dowex MWA-1 and Amberlite IRA-35 were employed for lactic acid recovery using model fermn. broth. The broth was first acidified by using a **cation exchanger** before sorption of lactic acid onto the basic sorbents. Lactic acid was completely recovered from the VI-15 column after 7 bed vols. (BV) of methanol, whereas only 64% was recovered from MWA-1 after 4.5 BV and 18% from IRA-35 after 5 BV. The 5% NH4OH eluted all lactic acid from the MWA-1 column in 1.5 BV with a max. effluent concn. of 113 mg/mL. The simple recovery scheme employed was not sufficient to produce heat-stable lactic acid. Other broth components were also adsorbed by the basic sorbents and could not be removed during the rinse step, but eluted with lactic acid during the desorption step.

ACCESSION NUMBER: 1996:324821 CAPLUS
DOCUMENT NUMBER: 125:8533
TITLE: Recovery and purification of lactic acid from fermentation broth by adsorption
AUTHOR(S): Evangelista, Roque L.; Nikolov, Zivko L.
CORPORATE SOURCE: Dep. Food Sci. Human Nutr., Iowa State Univ., Ames, IA, 50011, USA
SOURCE: Appl. Biochem. Biotechnol. (1996), 57/58 (Seventeenth Symposium on Biotechnology for Fuels and Chemicals, 1995), 471-480
CODEN: ABIBDL; ISSN: 0273-2289
DOCUMENT TYPE: Journal
LANGUAGE: English

L6 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The invention relates to a method for prepg. an org. acid or its salt by a continuous process. In accordance with the invention, a feed soln. is continuously passed into a bioreactor contg. microorganisms bound to a solid carrier, the acidic soln. withdrawn from the bioreactor is passed through a column on an anion exchanger regenerated with alkali metal hydroxide, the feed soln. withdrawn from the anion exchange column is recycled to the bioreactor, and at suitable intervals, the feed soln. is displaced by water and the anion exchange resin is regenerated with alkali metal hydroxide to recover the acid as an alkali salt. If acid is the desired end product, the alkali metal salt soln. is passed through a column of a **cation exchanger** in H+-form to yield an acid.

ACCESSION NUMBER: 1996:50600 CAPLUS
DOCUMENT NUMBER: 124:85057
TITLE: A method for preparing an organic acid or its salt
INVENTOR(S): Hammond, Roger; Hannikainen, Jaakko; Viljava, Tapio
PATENT ASSIGNEE(S): Cultor Oy, Finland

SOURCE: PCT Int. Appl., 22 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9532301	A1	19951130	WO 1995-FI277	19950522
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
FI 9402403	A	19951125	FI 1994-2403	19940524
AU 9525668	A1	19951218	AU 1995-25668	19950522
PRIORITY APPLN. INFO.:			FI 1994-2403	19940524
			WO 1995-FI277	19950522

L6 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2001 ACS
 AB A process is disclosed for extg. pure lactic acid from fermn. broths by ion exchange chromatog. on a strongly acid **cation exchanger**, preferably in the H⁺ form. In a 1st step, the NH₄-lactate coming from the fermn. is converted by authentic ion exchange into the free acid. Preferably said conversion is carried out on a weakly acid **cation exchanger** in the H⁺ form.

ACCESSION NUMBER: 1994:653892 CAPLUS
 DOCUMENT NUMBER: 121:253892
 TITLE: Lactic acid extraction and purification process
 INVENTOR(S): Sarhaddar, Schahroch; Scheibl, Anton; Berghofer, Emmerich; Cramer, Adalbert
 PATENT ASSIGNEE(S): Vogelbusch G.m.b.H., Austria
 SOURCE: PCT Int. Appl., 43 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9419307	A1	19940901	WO 1994-AT16	19940217
W: FI, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 684941	A1	19951206	EP 1994-906087	19940217
EP 684941	B1	19971029		
R: DE, FR, GB, IT, NL				
FI 9503883	A	19950911	FI 1995-3883	19950817
US 5641406	A	19970624	US 1995-505166	19951010
PRIORITY APPLN. INFO.:			AT 1993-310	19930218
			WO 1994-AT16	19940217

L6 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2001 ACS
 AB The method comprises indirect extn. of ions from an aq. soln. with a water-immiscible org. extractant to yield a loaded extractant where the soln. and the extractant are sepd. by a solute-permeable **cation exchanger**. The app. comprises .gtoreq.1 ion-exchange membrane module and means for the sep. introduction and withdrawal of aq. and org. phases, whereby these phases circulate at the 2 sides of each membrane in the module. The method and app. are applicable, among others, for the recovery of carboxylic acids from fermn. broths.

ACCESSION NUMBER: 1994:110646 CAPLUS
 DOCUMENT NUMBER: 120:110646
 TITLE: Method and apparatus for liquid-liquid extraction

across ion-exchange membranes
 INVENTOR(S): Kedem, Ora; Bromberg, Lev; Eyal, Aharon M.
 PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
 SOURCE: Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 574717	A2	19931222	EP 1993-108101	19930518
EP 574717	A3	19940525		
R: CH, DE, ES, FR, GB, IT, LI, NL				
PRIORITY APPLN. INFO.:			IL 1992-101901	19920518
			IL 1992-101905	19920518

L6 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Lactic acid (I) is inexpensively and continuously purified from fermn. broth contg. I salts (alkali or alk. earth metals) by removal of lactic acid bacteria, chromatog. on a cation exchange resin, concn. to .gtorsim. 80% I, and distn. of the conc. at reduced pressure. Fermn. broth contg. I Na salt (manufd. in a bioreactor) was treated with Diaion SK IB (**cation exchanger**), concd. until .gtoreq.90%, and distd. at .ltoreq.130.degree. and 5 mmHg to give high-purity I. The purifn. app. is described.

ACCESSION NUMBER: 1989:476553 CAPLUS
 DOCUMENT NUMBER: 111:76553
 TITLE: Purification of lactic acid from fermentation broth
 INVENTOR(S): Obara, Hitomi
 PATENT ASSIGNEE(S): Shimadzu Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01091788	A2	19890411	JP 1987-248592	19870930
JP 07089942	B4	19951004		

L6 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB In order to obtain a higher yield of the final product during manufg. of Ca lactate [814-80-2], a mother liquor was purified by passing through cation and then anion exchangers at the flow rate of 150 mL/cm2/h, giving lactic acid [50-21-5] which was reused in the manufg. process. The method was efficient with an 80% lactic acid yield. By vol., a **cation exchanger** (KU-2-8 [11118-20-0]) purifies 10 vol., and anion exchangers (AV-17P [37360-78-4], AV-17-8 [12642-25-0], and AV-16GS [12626-33-4]) purify 30 vol. of lactic acid.

ACCESSION NUMBER: 1987:90148 CAPLUS
 DOCUMENT NUMBER: 106:90148
 TITLE: Recovery of calcium lactate mother liquor by using ion exchangers.
 AUTHOR(S): Shkurina, O. V.; Dauksha, V. E.
 CORPORATE SOURCE: Kursk. Med. Inst., Kursk, USSR
 SOURCE: Khim.-Farm. Zh. (1986), 20(11), 1375-7
 CODEN: KHFZAN; ISSN: 0023-1134
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian

L6 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The removal of Na, Ca, K, and Fe from lactic acid (I) [50-21-5] solns. is performed best on the **cation exchanger** KU 2

[11098-94-5]. On this exchanger the order of ion retention is: $\text{Ca}^{2+} > \text{K}^{+} > \text{Na}^{+} > \text{Fe}^{3+}$. The appearance of Fe^{3+} in the eluate indicates that KU 2 is spent. The removal of Cl^{-} and SO_4^{2-} from I soln. is conducted best on AV 17-2P [37380-51-1] anion exchanger, initially in the OH^{-} form. The introduction of I converts AV 17-2P to the lactate form. Since I anion is retained more strongly than Cl^{-} or SO_4^{2-} , the latter anions can be removed.

ACCESSION NUMBER: 1984:474731 CAPLUS
DOCUMENT NUMBER: 101:74731
TITLE: Purification of industrial lactic acid solutions with ion exchangers
AUTHOR(S): Zeleneva, N. A.; Shamritskaya, I. P.; Ivanova, E. V.
CORPORATE SOURCE: Voronezh. Tekhnol. Inst., Voronezh, USSR
SOURCE: Teor. Prakt. Sorbtsionnykh Protssessov (1983), 16, 114-17
CODEN: TPRSBE
DOCUMENT TYPE: Journal
LANGUAGE: Russian

L6 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Levulose [57-48-7] and dextrose [50-99-7] in raw sugar and HCO_2H [64-18-6], AcOH [64-19-7], propionic acid [79-09-4], butyric acid [107-92-6], and lactic acid [50-21-5] in molasses, sweetwater and raw sugar were the main components sepd. on columns contg. HPX 87 [74504-51-1] in Ca and H form using H_2O and 0.05 N H_2SO_4 as eluent, resp.

ACCESSION NUMBER: 1981:571399 CAPLUS
DOCUMENT NUMBER: 95:171399
TITLE: Analysis of sugars and organic acids
AUTHOR(S): Charles, Donald F.
CORPORATE SOURCE: California and Hawaiian Sugar Co., Crockett, CA, USA
SOURCE: Int. Sugar J. (1981), 83(991), 195-9
CODEN: ISUJA3; ISSN: 0020-8841
DOCUMENT TYPE: Journal
LANGUAGE: English

L6 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Lactic acid [50-21-5] was obtained by culturing *Streptococcus lactis*, sepg. the antibiotic nisin, treating the residual liq. with alkali up to pH 9.5-9.8, and filtering the residue. The soln. was purified by passing 1st through a **cation exchanger** (sulfopolystyrene resin in H^{+} form) and then an anion exchanger (condensed type having secondary, tertiary, and quaternary aliph. amino groups), with subsequent desorption with H_2SO_4 .

ACCESSION NUMBER: 1980:530609 CAPLUS
DOCUMENT NUMBER: 93:130609
TITLE: Lactic acid
INVENTOR(S): Vozlinskii, M. M.; Sileva, M. N.; Bulenkov, G. I.; Strakhova, G. D.
PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of Microbiological Plant-Protecting Ag, USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1980, (19), 91.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 735590	T	19800525	SU 1977-2543572	19771115

L6 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Lactic acid (I) [50-21-5] was obtained from whey by pasteurization at 72-5.degree. and fermn. for 15-20 h at pH 5.4-5.7 using *Lactobacillus lactis* and *L. bulgaricus* 168, 1711, 1712, and 2592 bacteria strains. The soln. was then heated to 85-90.degree., pptd. proteins and salts

centrifuged, and the supernatant passed through a column fixed with
 cation exchanger to convert NH₄ lactate into I.
 ACCESSION NUMBER: 1977:532339 CAPLUS
 DOCUMENT NUMBER: 87:132339
 TITLE: Lactic acid from whey
 INVENTOR(S): Poznanski, Stefan; Kornacki, Kazimierz; Smietana,
 Zbigniew; Rymaszewski, Jerzy; Surazynski, Aleksander;
 Jakubowski, Jerzy; Chojnowski, Wladyslaw
 PATENT ASSIGNEE(S): Akademia Rolniczo-Techniczna, Pol.
 SOURCE: Pol., 2 pp.
 CODEN: POXXA7
 DOCUMENT TYPE: Patent
 LANGUAGE: Polish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 86492	P	19760531	PL 1973-163278	19730612

L6 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The monoprotic acids present in hydrolyzates from alkali cellulose prepd. from cotton were detd. by column and paper chromatog. Purified cotton was cut into 20-mm. lengths, mercerized for 1 hr. at 25.degree. in 18% NaOH, and the resulting alkali cellulose was pressed to 33% cellulose content and aged in an autoclave at 33.degree. and 2 atm. for 200 hrs. Traces of alkali were removed by immersion in 0.5% HOAc for 1 hr. and the sample was dried to yield aged alkali cellulose with 5.1 meq./100 g. CO₂H content. A 43% HCl soln. (5 l.) was used to hydrolyze 250 g. alkali cellulose for 6 hrs. The HCl was evapd. in vacuo at 35.degree. and the concd. hydrolyzate was dild. to 1.8 l. and boiled for 5 hrs. The hydrolyzate contg. 900 meq. HCl was passed through an ion-exchange column contg. Dowex 2-X8 anion exchanger in the acetate form and the collected eluent contained the sugars and lactones of the org. acids. The monoprotic acids were eluted with 12 l. 5M HOAc, although the fractions were titrated with NaOH to pH 8 and maintained at this pH for 4 hrs. to saponify the lactones. The sugar-saponif. lactone fraction was passed through a column and the collected effluent was concd. in vacuo, and the combined fractions were then eluted with 250 ml. 0.5M NaOAc and isolated by passing through a H cation exchanger to yield 820 mg. acid fraction. The org. acids were sepd. on a preparative anion-exchange column by elution with 0.5M HOAc and 0.5M NaOAc. Paper chromatog. and gas chromatog.-mass spectrometry were also used to det. the acids present. Sugars present were detd. by partition chromatog. on an anion exchanger in the sulfate form. Large amts. of arabinic, erythronic, mannonic, and glycolic acid end groups were present. Minor amts. of gluconic, ribonic, and glyceric acids were present, but no glucometasaccharinic units were detd. The major reaction during aging is oxidn. at the C-2 or C-3 position followed by .beta.-alkoxy elimination and formation of the glucose end group in the cellulose chain, which is further attacked to yield aldonic acid end groups.

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